April 21, 1977

Sir Peter Medawar, CH, FRS
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Dear Peter,

Everybody would be delighted if you could give a seminar here after your visit to San Francisco in late November. We would pay the extra air fare, for two, which this side trip would entail and all your expenses here, including hotel accommodation, for two. We'd also suggest you stay two nights here so that your visit isn't too much of a rush. In addition there would be a very modest honorarium. I suggest you write again to me, at this address, in mid-September (when I'll be back from Denmark) and we can then start to plan the exact dates. It usually pays to consult the airline schedules before being too precise and these change from time to time. Naturally you could break your journey at L.A. either on the way here or on the way back. Incidentally since you are going in any case to visit three U.S. cities there may be a very cheap air fare for doing all this if you book well in advance. If this seems a sensible thing to aim for we should perhaps try to tie it all up a little earlier. I'll ask my secretary to look into it but as somebody else is paying you may not want to be bothered with all that.

Thank you for the papers about fetal antigens. Of course I've known for some time about the possible connection because when we get interested in embryology Sydney, who had picked up the idea, I think, from something Boyce had just done, wanted to cultivate tumour lines to help us study fetal antigens which, from many lines of work, especially on Drosophila, we both thought to be important. (The analogy was the use of myelomas to study antibody molecules.) I thought it a good idea but I was against doing it then because I thought it would be too much work for Sydney to take on in addition to getting the nematode system going. The irony of it is that, due

to Rothschild, our division at Cambridge now studies the system in reverse. That is, there is a small section, headed by Ed Lennox (now migrated from the Salk to MRC, Cambridge) who are studying the chemistry (i.e. the exact chemical nature) of the new surface antigens found on chemically induced tumours. We faintly hope all this will then spill over onto the work also going on in Cambridge on developmental biology.

I haven't yet read the "magisterial review" by Coggin and Anderson but it seems, on general grounds, rather likely that to get a tumour you need a new surface antigen of some sort. Surface antigens are probably not easy to produce by any old process and the cell would do well to use one that has already been evolved to sit nicely in the cell surface. Fetal antigens are obvious candidates for this. If one adds that chemical carcinogens almost certainly work because they are mutagenic then, in outline, the whole thing seems fairly clear. It's when one gets down to details and asks nasty, precise, questions that one sees that, so far, it's all a bit flimsy. But very interesting, all the same, and I certainly feel I should know more about it.

Nice of you to think of Panspermia for Vogue (curiously enough, we did originally consider Playboy) but I think not at the moment. I have faint plans for a popular book on the subject, since everybody enjoys hearing about the idea, but it would really be a peg to hang ideas on The Origin of Life, The Structure of the Universe, The Nature of Science and other Large Topics.

F. H. C. Crick
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